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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/676,862      | 09/30/2003  | Kenneth So           | 10519/112           | 7636             |

7590 03/09/2005

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| EXAMINER |
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LAM, DAVID

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| ART UNIT | PAPER NUMBER |
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2827

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

|                              |                                      |                                 |  |
|------------------------------|--------------------------------------|---------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/676,862 | <b>Applicant(s)</b><br>SO ET AL |  |
|                              | <b>Examiner</b><br>David Lam         | <b>Art Unit</b><br>2827         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 28-34 is/are allowed.
- 6) ☒ Claim(s) 21-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/03, 1/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 21-22, 24-25, 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Passuccit et al. (5,276,644).

Regarding to claims 21-22, 24-25, 27, Passuccit et al. discloses a non-volatile memory comprising: a two-dimension memory array including a memory cell comprising temperature-dependent behavior; a current sensing amplifier (SA) coupled with the memory cell; a set of memory cells couple with the current sensing amplifier, the set of memory cells generating a current reference ( $I_{vr}$ ) when a voltage is applied to the set of memory cells; wherein the current

sensing amplifier compares the current reference to current sensed back from the memory cell during a read operation to determine whether the memory cell is programmed; a programmable mirror (CM2) interposed between the set of memory cells and the current sensing amplifier, wherein the memory cell is a write-many memory cell. *See Figs. 2-3; Cols. 4-5.*

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Passcuccit et al. (5,276,644) in view of Scheuerlein (6,545,898).

Regarding to claims 23, 26, Passcuccit et al. disclose the claimed invention as noted above but lack an inclusion of wherein the memory cell is a write-once memory cell and part of a three-dimensional memory array. Scheuerlein discloses a memory device comprising three-dimensional array (100) comprises write-once memory cell. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify by utilizing Scheuerlein's teach to form a three-dimensional write-once memory array of Passcuccit et al.'s memory array to reduce leakage currents when writing and faster write time of a selected memory cell. *See Figs. 1, 10-11; Cols. 3-4, 11-13.*

*Allowable Subject Matter*

3. The following is an examiner's statement of reasons for allowance: Claims 1-20, 28-34 are allowable over the prior art of record because none of the prior art whether taken singularly or in combination, especially when these limitations are considered within the specific combination claimed, to teach: a memory system comprising first and second temperature-dependent reference voltages, a voltage regulator, among others as claimed in independent claim 11, operative to generate a bit line voltage from the other of the first and second temperature-dependent reference voltages; sensing amplifier, among others as claimed in independent claim 28, coupled compares the temperature-dependent reference current comprises a positive temperature coefficient to current sensed back from the memory cell during a read operation to determine whether the memory cell is programmed. Method for temperature compensation for a memory cell comprising step of generating at least one of a first/second temperature-dependent reference voltage comprising a negative/positive temperature coefficient, and among other steps as claimed in independent claim 1.

*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Van Buskirk et al. (6,205,074) disclose a temperature compensated bias generator.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lam whose telephone number is 571-272-1782. The examiner can normally be reached on 6:00 – 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho can be reached on 571-272-1777. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Lam

February 23, 2005



**DAVID LAM**  
**PRIMARY EXAMINER**